

ABSTRACT

An economical, compact frequency hopping spread spectrum wireless data telemetry transceiver is adapted to establish and maintain communication links at 2.4 GHz. The wireless transceiver includes RF and computer control components in a compact package approximately the size of a deck of cards and is adapted to be built into original equipment manufacturer (OEM) products to support a wide range of wireless data telemetry applications. Each transceiver includes a shielded RF board or module with a frequency hopping transmitter and receiver, an antenna, and a digital control board or module. The transceiver functions as a half duplex, bi-directional communication device; transmit and receive functions are time interleaved in a non-overlapping fashion. The RF Board consists of a transmitter, receiver, frequency synthesizer and T/R Switch, each controlled by an external microprocessor to either transmit serial data or receive serial data. The receiver includes a novel frequency discriminator quadrature filter including a surface mounted, low power, FM IF system integrated circuit, to provide a minimum shift keying MSK demodulator with a tunable, relatively broad band IF stage in place of the traditional LC tank circuit.